REMARKS

Claims 21, 27, 33, 40, 41 and 42 have been amended. New claims 47-55 have been added to round out the scope of the invention. No new matter has been introduced. Claims 18-20, 22-26, 28-30, 34, 35, and 42-46 have been canceled. Claims 1-17, 31 and 32 have been withdrawn. Claims 21, 27, 33, 36-41, and 47-55 are pending.

Claims 18, 19, 20, 21, 22, 26, 27, 28, 29, 30, 34, 35, 40, 41, 42, 43 and 46 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,104,021 (Ogawa). Applicant respectfully traverses the rejection.

The present invention relates to a light detecting system. Accordingly, independent claim 21, as amended, recites "a light detecting system comprising: a substrate having a plurality of photosensitive regions; and a substantially planar microlens array formed over said plurality of photosensitive regions." Claim 21 further recites the microlens array including "a first light conductor having a plurality of concave recesses, and a second light conductor within each recess and over a planar surface of said first light conductor."

Independent claim 27, as amended, recites "an integrated circuit comprising a substrate having a plurality of photosensitive regions; and a microlens array formed over said plurality of photosensitive regions; said microlens array comprising; a first light conductor having a plurality of concave recesses, said plurality of concave recesses being coextensive, and a second light conductor within each recess and over said first light conductor, and readout circuitry coupled to said plurality of photosensitive regions within said substrate."

Independent claim 33, as amended, recites a "method of forming an imaging device, said method comprising: providing a substrate having a plurality of photosensitive regions; and forming an array of microlenses, the array including a respective microlens over each of said plurality of photosensitive regions by: forming a first light conductor having a concave recess over each of said photosensitive regions such that said concave recess contacts an adjacent concave recess; and forming a second light conductor within each concave recess such that said second light conductor is coextensive with an adjacent second light conductor."

Ogawa relates to a solid state image sensing element. Abstract. Ogawa fails to disclose, teach, or suggest "a substantially planar microlens array formed over said plurality of photosensitive regions; said microlens array comprising . . . a second light conductor within each recess and over a planar surface of [a] first light conductor," as recited in independent claim 21. An advantage of the microlens array of the FIG. 4 exemplary embodiment of the invention is to decrease the amount of cross talk between pixel cells. The amount of cross talk is reduced by providing a second light conductor over a planar surface of a first light conductor. The second light conductor reduces the amount of light entering the planar surface of the light conductor, and thereby limiting the amount of unguided light that travels through the microlens array. *See* paragraph [0028] of the Applicant's application ("the '222 application"). Ogawa does not address the problem of cross-talk, much less disclose, teach, or suggest a way of reducing cross-talk.

For at least this reason, Applicant respectfully submits that claim 21 is allowable over Ogawa. Claims 47-52 depend from claim 21 and are allowable along with claim 21 and on their own merit.

Ogawa similarly fails to disclose, teach, or suggest a microlens array including "a first light conductor having a plurality of concave recesses, said plurality of concave recesses being coextensive with each other, and a second light conductor within each recess," as recited in claim 27. An advantage of the FIG. 10 exemplary embodiment of the invention is to minimize the amount of light reflected and, therefore, not captured by the photosensor within a pixel cell. *See* paragraph [0048] of the '222 application. Ogawa does not address light reflection, much less disclose, teach, or suggest a way of minimizing reflection.

For at least this reason, Applicant respectfully submits that claim 27 is allowable over Ogawa. Claims 53-55 depend from claim 27 and are allowable along with claim 27 and on their own merit.

Ogawa fails to disclose, teach, or suggest a method of forming an imaging device "by forming a first light conductor having a concave recess over each of said photosensitive regions such that said concave recess contacts an adjacent concave recess; and forming a second light conductor within each concave recess such that said second light conductor is coextensive with

an adjacent second light conductor," as recited in claim 33. As discussed above with respect to claim 27, an advantage of the FIG. 10 exemplary embodiment of the invention is to minimize the amount of light reflected and, therefore, not captured by the photosensor within a pixel cell. *See* paragraph [0048] of the '222 application. Ogawa does not address light reflection, much less disclose, teach, or suggest a way of minimizing reflection.

For at least this reason, Applicant respectfully submits that claim 33 is allowable over Ogawa. Claims 36-41 depend from claim 33 and are allowable along with claim 33 and on their own merit

Claims 24, 25, 44, and 45 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Ogawa in view of U.S. Patent No. 5,701,008 (Ray). Applicant respectfully traverses the rejection.

Although claims 24, 25, 44, and 45 have been canceled, the limitations contained therein have been incorporated into some of the independent claims. Applicant respectfully submits that the combination of Ogawa and Ray is improper, and even if combined, fail to disclose, teach, or suggest each and every limitation of claims 27 and 33.

Courts have generally recognized that a showing of a prima facie case of obviousness necessitates three requirements: (i) some suggestion or motivation, either in the references themselves or in the knowledge of a person of ordinary skill in the art, to modify the reference or combine the reference teachings; (ii) a reasonable expectation of success; and (iii) the prior art references must teach or suggest all claim limitations. *See e.g., In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999); *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998); *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573 (Fed. Cir. 1996); and MPEP §§ 706.02(j) and 2143 *et seq.* Furthermore, the "[t]he teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)." MPEP §706.02(j).

The Office Action fails to provide any suggestion or motivation to combine the two references, as required by MPEP §§ 706.02(j) and 2143 *et seq.* Applicant respectfully submits

that there is no motivation to combine the references to allegedly arrive at the claimed invention. Ogawa relates to a miniature lens buried in a transparent interlayer insulating layer over a photo diode. Abstract of Ogawa. Ray, on the other hand, relates to etching convex microlenses and positioning the microlenses over a respective detector pixel. Col. 4. ll. 29-32 of Ray. There is no motivation to combine a reference that discloses a buried miniature microlens with a reference that discloses convex microlenses having no recesses and only one light conductor (the material comprising the microlens array). *See* FIG. 4 of Ray. Therefore, Applicant respectfully submits that the references are not combinable.

Even if the two references were properly combinable, which they are not, the references, alone or in combination, fail to teach or suggest "a first light conductor having a plurality of concave recesses, said plurality of concave recesses being coextensive with each other, and a second light conductor within each recess," as recited in claim 27. Ray does not even address concave recesses

Similarly, the two references, alone or in combination, fail to disclose, teach, or suggest "forming a first light conductor having a concave recess over each of said photosensitive regions such that said concave recess contacts an adjacent concave recess; and forming a second light conductor within each concave recess such that said second light conductor is coextensive with an adjacent second light conductor," as recited in claim 33.

For at least these reasons, claims 21, 27, 33, and their dependent claims 36-41 and 47-55 are allowable over Ogawa and Ray.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

By _____

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